PRINCIPLES OF TRANSDUCER DEVICES AND COMPONENTS

Edited by

Sheroz Khan, International Islamic University Malaysia

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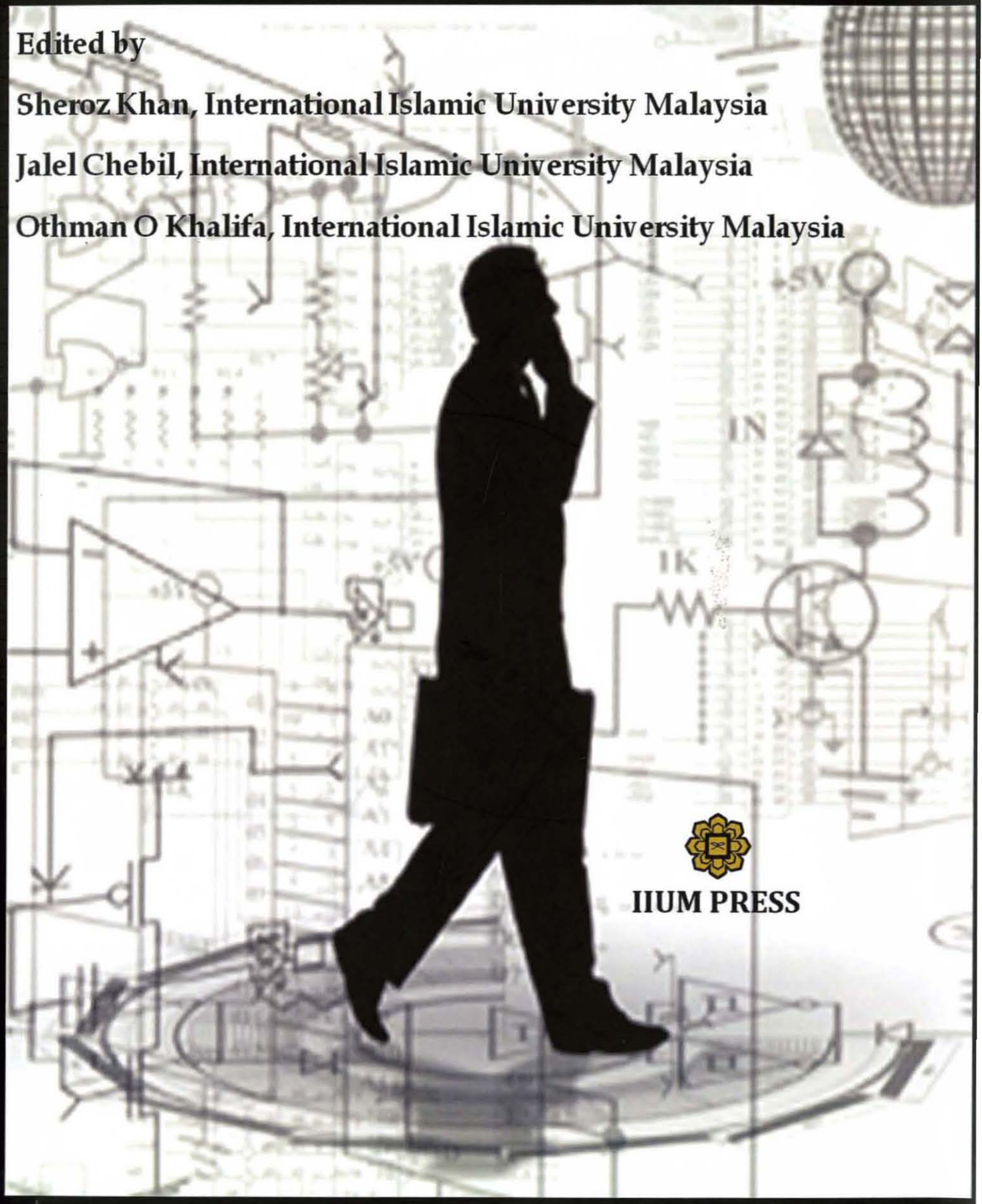

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Chapter 8

INDUCTIVE POWER SYSTEM FOR ENERGY HARVESTING

ATIKA ARSHAD, RUMANA TASNIM , SHEROZ KHAN, AHM ZAHIRUL ALAM

8.0 INTRODUCTION

Inductive sensor systems have been becoming topics of heated debate among researchers for applications of industrial automation and biomedical applications because of its contactless means of transferring energy and also due to the high demand of low power and low voltage integrated circuit devices. These devices are enabling light weight designs for applications such as in movement and displacement measurement, temperature, blood pressure, heart rate devices, wireless capsule endoscopy, and power transfer across narrow gaps.

8.1 WIRELESS SENSOR SYSTEM

The passive inductive sensor is quite commonly used for applications in inaccessible locations without the need for using any onboard power supply. Inductive transducer sensors are being used as implanted for powering bio-implants within a body. Such embedded sensors transfer energy to its circuitry via non-contactless means. A functional block diagram of an inductive power transfer system is shown in Figure 8.1. Here, there is a transmitter side (primary coil) on the left and a receiver on the right (secondary coil) which functions as a wireless transducer. The external part of this inductive link is located at the external reader, which can be placed outside the body whereas the implanted part is positioned inside body. The information from the implant should be transferred to the external readout circuit.